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ABSTRACT

The purpose of this study was to explore whether, and if so how, ongoing measurement and evaluation procedures affect the instruction that special educators provide and the educational decisions that they make. Eighteen experimental group teachers employed specific continuous evaluation procedures while 21 contrast group teachers employed conventional special education measurement and evaluation procedures. During the 18-week treatment, the teachers' structure of instruction was measured three times, and the teachers' educational decisions and their assessment procedures were surveyed at the middle and end of the treatment. Additionally, at the termination of the study, teachers' descriptions and ratings of the experimental procedures were assessed. Analyses revealed that using systematic, ongoing measurement and evaluation procedures increased the degree of structure in the instruction teachers provide, and resulted in more specific and realistic judgments about student programs and progress and more responsive pedagogical decisions. Experimental teachers also reported that, although time-consuming, their procedures were feasible and useful. Structure of Instruction rating scale, teacher questionnaires, a goal and objective form, and experimental and contrast training schedule forms are appended. (Author/PN)

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Research Report No. 97

DIRECT AND FREQUENT MEASUREMENT AND EVALUATION: EFFECTS ON INSTRUCTION AND ESTIMATES OF STUDENT PROGRESS

Lynn S. Fuchs, Stanley L. Deno, and Phyllis K. Mirkin

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Lynn S. Fuchs, Stanley L. Deno, and Phyllis K. Mirkin

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November, 1982

Abstract

The purpose of this study was to explore whether, and if so how, on-going measurement and evaluation procedures affect the instruction that special educators provide and the educational decisions that they make. Eighteen experimental group teachers employed specific continuous evaluation procedures while 21 contrast group teachers employed conventional special education measurement and evaluation procedures. During the 18-week treatment, the teachers' structure of instruction was measured three times, and the teachers' educational decisions and their assessment procedures were surveyed at the middle and end of the treatment. Additionally, at the termination of the study, teachers' descriptions and ratings of the experimental procedures were assessed. Analyses revealed that using systematic, on-going measurement and evaluation procedures (a) increased the degree of structure in the instruction teachers provide, and (b) resulted in more specific and realistic judgments about student programs and progress and more responsive pedagogical decisions. Experimental teachers also reported that, although time-consuming, their procedures were feasible and useful. Implications for special education programming are discussed.

Direct and Frequent Measurement and Evaluation:

Effects on Instruction and Estimates of Student Progress

PL 94-142 requires special education teachers to formulate short-term objectives and annual goals for students to ensure appropriate education and facilitate handicapped pupils' movement toward less restrictive educational settings. Federal law also directs special educators to assess student progress toward specified objectives and goals. Despite this apparent concern for and emphasis on student evaluation, PL 94-142 does not specify how student progress should be assessed; special education practitioners are free to choose whatever assessment procedures they wish.

Research indicates that special educators tend to employ informal observation when making decisions about students' performance on objectives (Potter & Mirkin, 1982). Unfortunately, informal observation often leads to erroneous judgments about levels of academic performance and inaccurate conclusions concerning whether objectives have been met (Fuchs, Fuchs, & Warren, 1982).

As an alternative to informal assessment methods, repeated curriculum-based measurement and continuous evaluation procedures render more objective, accurate data (Fuchs, Mirkin, Deno, Marston, & Tindal, 1982). Additionally, such systematic, on-going measurement and evaluation appears to affect positively student academic achievement (Beck, 1981; Fuchs, Deno, & Mirkin, 1982). Concurrent with a better data base and improved pupil gains, one would expect better teaching and instructional decision making. The purpose of the present study was to explore whether more systematic, on-going measurement and evaluation, in fact, does affect special educators'

teaching decisions and the instruction they provide. Specifically, the study examined the following questions:

- Does repeated, direct measurement and continuous evaluation affect the structure of instruction provided by special educators?
- What is the relation between such measurement and evaluation and teachers' decisions about student progress, goals, and current performance levels?
- Is there a relation between measurement and evaluation procedures and the assessment methods on which teachers rely to formulate educational decisions?
- How do teachers react to using systematic, on-going measurement and evaluation procedures?

Method

Subjects

Subjects were 39 New York City public school teachers who volunteered to participate in the project. From their caseloads, teachers each selected three or four students for inclusion in the study; then, within schools, each teacher was assigned randomly to either an experimental or a contrast group. Four teachers in each group had participated in a pilot program during the previous academic year.

In the experimental group, teachers (3 male, 15 female) had taught special education for an average 3.79 years (SD = 2.85). Students in the experimental group (51 male, 13 female) read an average 3.48 years below grade level (SD = 1.87). Their age appropriate grade averaged 5.79 (SD = 1.66); 49% were placed in programs for emotionally handicapped students, 32% in programs for brain injured students, and 19% in resource programs.

Contrast group teachers (2 male, 19 female) had taught

handicapped children for an average 3.59 years (SD = 2.72). Students in the contrast group (57 male, 20 female) read an average 2.35 years below grade level (SD = 1.94). Their age appropriate grade level averaged 5.45 (SD = 1.65); 51% were placed in programs for emotionally handicapped students, 30% in resource programs, and 15% equally distributed across programs for physically handicapped, brain injured, and educable mentally retarded children.

Measures

Structure of instruction rating scale (SIRS). The SIRS (Deno, King, Skiba, Sevcik, & Wesson, 1982; see Appendix A) was employed to measure the structure of an instructional lesson. The scale is completed by an observer following a 20-minute observation of teacher interaction with one student. Twelve variables (Instructional Grouping, Teacher-directed Learning, Active Academic Responding, Demonstrating/Prompting, Controlled Practice, Frequency of Correct Answers, Independent Practice, Corrections, Positive Consequences, Pacing, Oral Reading Practice on Outcome Behavior, and Silent Reading) constitute the scale. These variables were selected because research supports the relation between each variable and student academic achievement (Reith, Polsgrove, & Semmel, 1981; Stevens & Rosenshine, 1981). However, the Independent Practice item was dropped during analyses because it was scored as non-applicable in all but a few instances. Internal consistency reliabilities (Cronbach's alpha) obtained for the 11-item scale were .88, .88, and .89 at three different measurements. A factor analysis (Deno et al., 1982) revealed that nine items (all but Positive Consequences and Silent

Reading Practice) significantly contributed to one factor called Structure.

Semi-annual teacher questionnnaire. A six-item teacher questionnaire was designed for the study (see Appendix B). On this questionnaire, teachers (a) described student progress, goals, and level of functioning in reading during the academic year, and (b) checked the assessment procedures by which they made their judgments concerning student progress.

End-of-the-year teacher questionnaire. A 12-item teacher questionnaire also was developed (see Appendix B). This questionnaire asked teachers to rate and describe how the experimental procedures were different from their normal evaluation procedures and how the study procedures were useful. Then, the questionnaire required teachers to indicate whether, and if so how, they would use the experimental procedures during the subsequent academic year.

Procedure

Treatments. The experimental treatment is described in Procedures to Develop and Monitor Progress on IEP Goals (Mirkin, Deno, Fuchs, Wesson, Tindal, Marston, & Kuehnle, 1981). Employing these procedures in the area of reading, the experimental group teachers first wrote curriculum-based IEP goals and objectives. This annual goal specified the segment of the curriculum and the date on which a student would read with proficiency; that is, at a certain rate and accuracy. The objective contained supplementary information; it indicated the weekly rate at which the student would have to improve in order to meet the annual goal (see Goal and Objective Form in

Appendix C). After setting goals and objectives, teachers developed curriculum-based measurement systems to match specific goals and objectives. Then, they were to measure students at least twice weekly and utilize those data to determine when to introduce program changes to increase the probability that students would achieve their goals. By January 4 all teachers had written goals and objectives, and were measuring and graphing student performance. By February 10 all teachers were employing data-utilization rules to determine when to make instructional changes (cf. Mirkin et al., 1981).

A sample Goal and Objective Form, Graph, and Instructional Change Form for Michael appear in Figures 1, 2, and 3, respectively. The Goal and Objective Form states that, in the 19 weeks remaining in the school year, Michael will improve his reading in Level 2 of the SRA passages so that he reads 85 words correct per minute with no more than 8 errors (see Figure 1). This annual goal represents approximately 2.5 times improvement over Michael's baseline rate of 35 words per minute (see Figure 2). This annual goal then was divided into 19 weekly objectives, each of which states that he will improve at an average increase of 2.6 words correct each week per minute with no increase in errors.

Insert Figures 1-3 about here

Michael's graph (see Figure 2) represents his words read per minute each school day in Level 2 of the SRA passages. The first three days of data depict Michael's baseline performance; the diagonal

line connecting the baseline median performance with the X is the dynamic aimline, which represents Michael's objective or the daily rate at which he must perform in order to meet the annual goal.

The vertical lines on Michael's graph signify the introduction of program changes, which are indicated by the letters B, C, and D. Each program change is detailed on the Instructional Change Form (see Figure 3). At least two times each week, Michael read from a randomly selected passage from Level 2 for one minute; the number of words he read correctly and the number of errors were scored and graphed on Figure 2. Every 7 to 10 data points, Michael's teacher inspected the graph. If the slope (calculated by the split-median solution; White, 1971) of Michael's performance across the 7 to 10 days was less than the slope of the dynamic aimline, then the teacher introduced a program change. As Figure 2 illustrates, Michael's performance improved dramatically over his previous performance with the introduction of the third program change.

With the Goal and Objective Form, the Graph, and the Instructional Change Form, Michael's educational program and progress toward goals were evaluated formatively. In response to measurement data, Michael's program was modified throughout the treatment phase to improve the likelihood that Michael would achieve his annual goal.

In the contrast treatment, teachers measured and evaluated student progress toward goals using conventional special education procedures.

Training. Each of three teacher trainers (TTs) was assigned to a set of schools and to the experimental and contrast teachers within

that set of schools. TTs provided training to teachers during weekly meetings from November through May. During these meetings, TTs taught the treatment procedures to the experimental group teachers. They taught the contrast group teachers strategies for diagnosing and treating learning and behavior problems, for structuring and managing their instructional groups, and for using audio-visual equipment and paraprofessionals. TTs spent similar amounts of time with both treatment groups: Experimental group teachers received an average of 23.52 hours individual meeting time (SD = 5.95), whereas contrast group teachers met individually with trainers for an average of 20.60 hours (SD = 6.22). A t test on the difference between the hours of training received by the two groups revealed no statistically significant difference. (See Appendix D for sample experimental and contrast training schedules.)

Data collection. TTs were taught and practiced the SIRS during a five-hour training session. Their inter-rater reliability was .87 on two training tapes. In January, April, and late May, a randomly selected student for each teacher was observed by a TT during a 20-minute reading lesson. Immediately following these observations, TTs completed the SIRS.

In April and June, experimental and contrast group teachers completed the Semi-annual Teacher Questionnaire for their students. In June, the experimental group teachers also completed the End-of-the-year Teacher Questionnaire.

Results

Instructional Structure

The degree of instructional structure was assessed during each trimester of the study using the SIRS. These scores were subjected to a one between factor (treatment), one within factor (trials on the SIRS) analysis of variance. Averaged across the three assessments, there was no statistically significant difference between the experimental and contrast groups on the total SIRS scores (mean of Structure, Positive Consequences, and Silent Reading). There also was no statistically significant difference on the SIRS trials when performance was averaged across the experimental and contrast groups. However, there was a statistically significant treatment X SIRS trials interaction, with the experimental group increasing their structure through the study trimesters (2.31, 2.76, 2.98, respectively) and contrast teachers decreasing their structure through the treatment (2.82, 2.52, 2.34), $F(2,69) = 6.57$, $p < .01$.

Teacher Decisions about Student Progress, Goals, and Current Performance Levels

On the Semi-annual Teacher Questionnaire, completed in April and June, teachers described student progress, goals, and level of functioning in reading, and checked the assessment procedures on which they relied to formulate these evaluations. In both April and June, there was a statistically significant relation between treatment condition and whether teachers judged that their students had made sufficient progress to reach their goals, $x^2(2) = 6.92$, $p < .05$ for April, and $x^2(2) = 12.77$, $p < .005$ for June. For both time periods,

the pattern of the relation was the same. A greater percentage of teachers in the contrast condition thought their students would meet goals; a smaller percentage of those teachers reported that their students would not meet goals; and a greater percentage of that group was uncertain.

With respect to whether teachers had adjusted students' reading goals, a statistically significant relation with measurement evaluation group was found to exist in April, $\chi^2(1) = 4.35$ $\underline{p} < .05$. Sixty-five percent of experimental group teachers reported that they had changed goals, whereas only 33% of contrast group teachers said they had revised goal statements. However, the relation was no longer present by June; at that time, both groups tended to maintain their pupils' goals.

Teachers also were asked to describe the success of the current reading program for each student. Regardless of treatment group, teachers tended to evaluate their programs as successful (74% and 79% for experimentals and contrasts, respectively). Very few teachers described their programs as not successful (6% and 7% for experimentals and contrasts, respectively). The remaining teachers were uncertain about the success of their programs.

When teachers were asked in April to "write a precise statement that describes the student's current level of functioning," there was no relation between the specificity of their statements and the measurement/evaluation treatment. In June, however, a relation was found, $\chi^2(2) = 9.84$, $\underline{p} < .01$, with greater percentages of experimental students' programs described highly and somewhat specifically and with

greater percentages of contrast students' programs described not at all specifically.

Figures 4 and 5 display the percentages of teachers' descriptions of student progress in April and June, respectively. At both times, the contrast teachers rated their students' progress somewhat less favorably; in June, this pattern was statistically significant, $\chi^2(5) = 17.51$, $p < .005$.

Insert Figures 4 and 5 about here

Assessment Methods on which Teachers Relied

The remaining questions on the Semi-annual Teacher Questionnaire concerned which assessment procedures teachers relied on to formulate their evaluations. At both data collection times and in both treatment groups, teachers reported that they relied on criterion-referenced measurement and on informal measurement; very small percentages of teachers reported that they relied on standardized testing. In April and June, there were statistically significant relations between treatment group and teachers' tendency to use direct and frequent measurement, $\chi^2(1) = 22.28$, $p < .001$ and $\chi^2(1) = 29.42$, $p < .001$, respectively. No contrast group teachers at either time reported that they relied on direct and frequent measurement.

Table 1 presents percentages of teachers in April and June reporting that they relied predominantly on different measurement procedures. As one can see, at both times, experimental teachers tended to rely predominantly on direct and frequent measurement, with

an even greater percentage of experimentals relying on this form of measurement by the end of the study. Contrast teachers tended to rely predominantly on one of several types of measures: standardized diagnostic tests, teacher-made tests, workbook samples, criterion-referenced measures (other than direct and frequent measurement), and number of short-term objectives mastered. Approximately the same percentage of teachers in the two groups relied on informal observation. The pattern of responses was significantly related to treatment condition in both April and June, $\chi^2(6) = 33.46$, $p < .001$ and $\chi^2(6) = 48.88$, $p < .001$, respectively. From April to June there were two shifts in the types of procedures teachers relied on most. By June, experimental group teachers tended to replace teacher-made tests with direct and frequent measurement; contrast group teachers tended to replace teacher-made tests and number of short-term objectives mastered with workbook exercises.

Insert Table 1 about here

Descriptions of Continuous Evaluation Procedures

On the End-of-the-year Teacher Questionnaire, experimental teachers typically described the continuous evaluation procedures as "very different" (68%) from their normal student evaluation procedures; 25% described the procedures as "different," and 8% described them as "somewhat the same." When asked to describe the ways these procedures differed from their normal routine, graphing was named most often, the accuracy of the method was mentioned second most

often, and both measurement frequency and the way in which pupils were motivated were cited third most often (see Table 2). Teachers reported that the experimental procedures were either "not very time consuming," or "time consuming" (37% in each category); 26% described the procedures as "very time consuming."

Insert Table 2 about here

Teachers also were required to rate the usefulness of the continuous evaluation procedures for several different functions. Table 3 is a display of the percentages of teachers giving each rank for each function. As one can see, the greatest percentage of teachers ranked the continuous evaluation procedures as "very helpful" for deciding when to change students' programs, and as either "helpful" or "very helpful" for developing goals, measuring students' progress toward goals, and communicating to parents and schools.

Insert Table 3 about here

When asked whether they would use the procedures next year, 68% said "yes," 6% said "no," and 26% said "maybe." Further, 34% of those indicating they would use the continuous evaluation procedures next year reported that they would employ the procedures with no modifications; other teachers cited a variety of changes in the procedures. Among the modifications named most frequently were (a) measuring a different reading behavior, (b) measuring less frequently,

and (c) starting to implement the procedures in September. With respect to the academic domains for which they would employ the procedures, teachers most frequently named reading and math, with social behavior and written expression also cited.

Discussion

The purpose of this study was to explore whether systematic, on-going measurement and evaluation procedures affect the instruction that special educators provide and the educational decisions they make. Toward this end, teachers were assigned randomly to either an experimental or contrast treatment group. In the experimental treatment (Mirkin et al., 1981), teachers were to (a) measure and graph students' oral reading performance at least twice weekly, and (b) compare at frequent intervals their students' actual progress trends against the slopes of students' expected goal aimlines. When students' actual progress trends compared unfavorably with their expected aimlines, teachers were to introduce a new dimension into their students' programs in an attempt to stimulate greater student progress. Contrast teachers employed conventional special education measurement and evaluation procedures. During the study, the structure of the instruction provided by these teachers was measured three times. The teachers' educational decisions and their assessment procedures were surveyed at the middle and end of the study. Additionally, at the termination of the treatment, teachers' descriptions and ratings of the experimental procedures were assessed.

Results indicated that using systematic measurement and evaluation procedures may increase the degree of structure in the

instruction teachers provide. Structure scores across the three trimesters of the study increased for experimental group teachers, but decreased for contrast group teachers. Research suggests that increased structure contributes to handicapped children's achievement (Reith et al., 1981; Stevens & Rosenshine, 1981), and may explain at least partially why, by the end of the study, students of the experimental teachers demonstrated better reading achievement than students of the contrast teachers (Fuchs, Deno, & Mirkin, 1982).

Findings of this study also suggest that teachers' decisions about student progress, goals, and current performance levels were related to how teachers measured and evaluated student progress. In June, when asked to rate student progress on a 5-point Likert type scale, experimental group teachers tended to give more favorable ratings. Nevertheless, both in April and in June, contrast group teachers were both more optimistic and more uncertain than experimental group teachers about whether student progress was adequate to attain goals. This uncertainty may have been a function of a data base that was inadequate relative to that of the experimental group teachers. The contrast teachers' optimism is explained less easily, because their students actually achieved poorly compared to students of the experimental group teachers. One might speculate that their optimism concerning student progress toward goals was related either to their having formulated less ambitious goals or to their misjudging student progress. This second explanation is supported in two ways: first, by research (Fuchs, Fuchs, & Warren, 1982) that demonstrates a tendency for teachers to overestimate

student performance on goals when assessments are based on unsystematic procedures; second, by results of this study suggesting that the experimental teachers tended to describe their students' current performance levels with much greater specificity than the contrast group teachers.

Additionally, contrast group teachers apparently overestimated the success of their programs. In Both April and June, nearly equivalent and very high percentages of teachers in both groups rated their programs as successful. Given the greater achievement of the experimental group students, these nearly equivalent percentages of teachers' ratings of program success again suggest inappropriate optimism by the contrast group teachers.

Perhaps related to the contrast group teachers' comparatively optimistic view on student progress toward goals and on their programs was their tendency to maintain established goal statements. Experimental group teachers more frequently reported that they revised their students' goals during the first two-thirds of the study. Given the difficulty of establishing initially appropriate goals for all students (Fuchs & Deno, 1982), one might anticipate a need to revise many goal statements. Yet, contrast group teachers failed to do so. It is possible that, based on unsystematic and lean data, they misjudged student performance as adequate and were content to maintain goal statements. Experimental teachers, on the other hand, may have demonstrated greater responsiveness to student behavior because of their comparatively rich data base; they may have had more and better information with which to recognize when goals failed to suit

students' current performance levels and when such goals needed to be revised.

Results concerning which assessment procedures teachers relied on to formulate their decisions about student progress, goals, and current performance levels corroborated the assumption that teachers in the two treatment groups actually employed different data bases. Throughout the study, large percentages of experimental group teachers, but no contrast group teachers, relied on direct and frequent measurement. Additionally, teachers described the experimental measurement and evaluation procedures as very different or different from typical special education practice. Furthermore, from April to June, experimental group teachers shifted their reliance from less frequent and systematic procedures to more frequent and systematic procedures (from teacher-made tests to direct and frequent measurement). In contradistinction, contrast group teachers tended to shift their reliance to less systematic procedures (from teacher-made tests and number of short-term objectives mastered to workbook samples).

Consequently, findings of this study suggest that, concurrent with a better data base and with improved pupil gains, teacher decision making and instruction improved when continuous evaluation procedures were used. Compared to contrast teachers who used typical special education measurement and evaluation methods, experimental teachers, who employed and, to a large extent, relied predominantly on technically adequate, repeated, curriculum-based measurement and evaluation procedures, not only achieved better student academic gains

(Fuchs, Deno, & Mirkin, 1982), but also (a) demonstrated greater increases in the structure of the instruction they provided, (b) were more realistic about and responsive to student progress toward goals, (c) judged more accurately the success of their students' programs, and (d) described their students' current performance levels more specifically.

In this study, teachers tended to indicate that the continuous evaluation procedures were either "not very time consuming" or "time consuming." Feasibility problems with implementing frequent measurement procedures have been demonstrated previously (King, Wesson, & Deno, 1982; Tindal, Fuchs, Christenson, Mirkin, & Deno, 1981). Nevertheless, teachers rated the procedures as useful or very useful for an array of purposes, and most teachers reported that they would continue to use the procedures next year. Therefore, although the procedures may be somewhat time consuming, teachers appear to recognize the procedures' potential usefulness and benefits, which were demonstrated empirically in this study.

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Table 1

Percentages of Teachers Relying on Different Measurement Procedures

Measurement Procedure	April		June	
	Experimental	Contrast	Experimental	Contrast
Standardized diagnostic	0	6	0	6
Criterion-referenced	0	10	5	10
Direct and frequent	46	0	60	0
Teacher-made	21	38	8	29
Workbook samples	0	6	0	26
Informal observation	24	23	25	21
Number of short-term objectives mastered	8	17	3	8

Table 2

Frequency with which Teachers Cited Different Aspects of Continuous Evaluation Procedures as Most Distinctive

Reason	N Cited First	N Cited Second	N Cited Third	Total N
Graphing	20	10	7	37
Accuracy	21	7	2	30
Frequency	17	4	0	21
Motivating to Child	0	14	7	21
Permanent Record	3	0	4	7
Type of Behavior Measured	4	0	0	4
Curriculum-based	0	2	0	2

Table 3

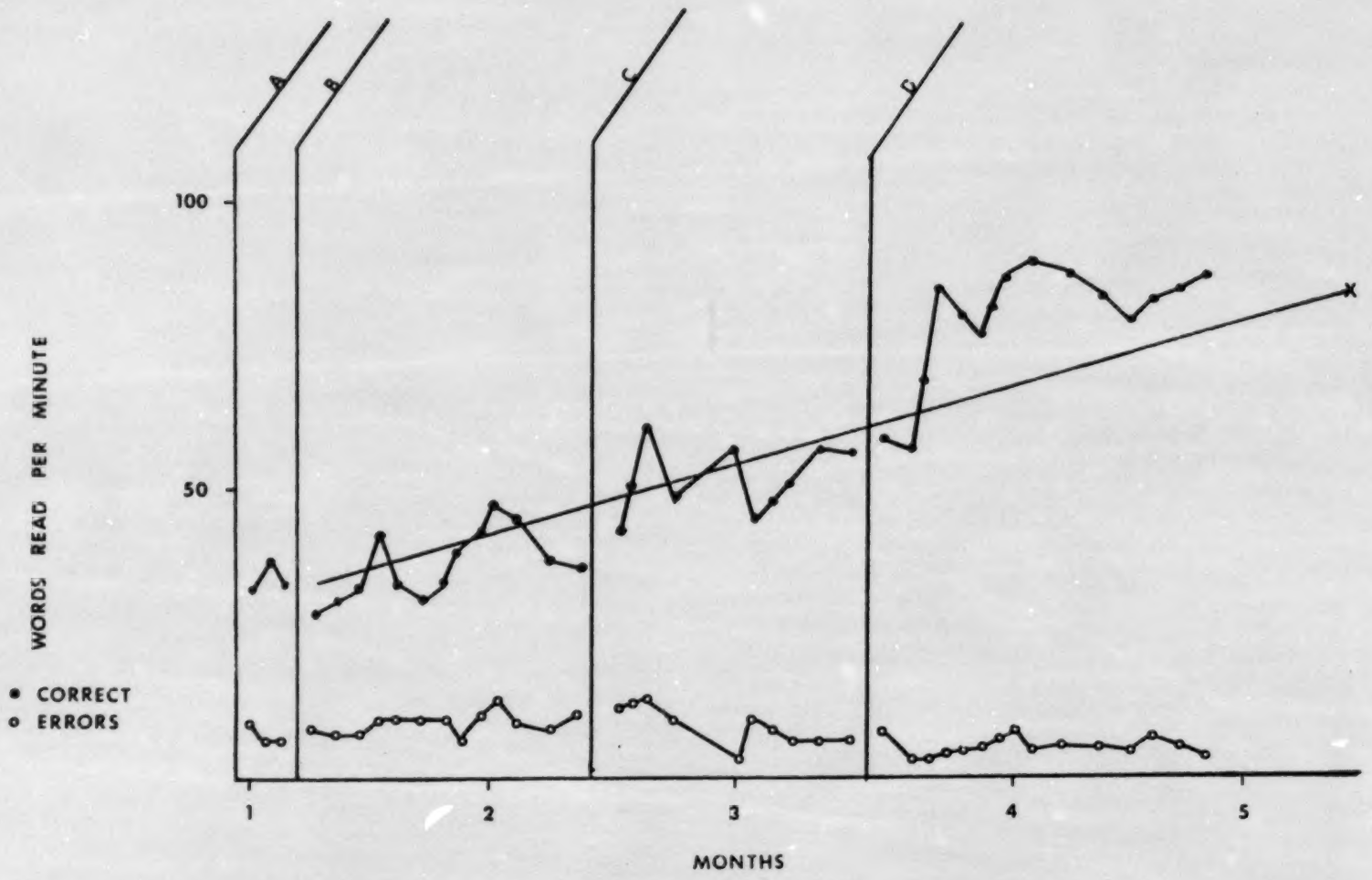
Percentages of Teachers Rating the Continuous Evaluation Procedures as "Not Sure" through "Very Helpful" for Different Purposes

Rating	Purpose						
	Developing IEPs	Developing Goals	Measuring Progress Toward Goals	Deciding when to Change Students' Programs	Communicating to School Personnel	Communicating to Parents	Communicating to Students
Not Sure							6
Not Helpful					2		31
Somewhat Helpful	36	18	5	23	28	17	12
Helpful	32	37	50	22	40	37	28
Very Helpful	31	45	45	55	30	46	23

GOAL In 19 weeks (# school weeks until year's end), when provided with stories from grade level 2 - SRA passages (Level #, series), Michael (student's name) will read aloud at the rate of 85 (wpm correct), with no more than 8 (#) errors.

OBJECTIVE Each successive week, when presented with a random selection from Grade level 2 - SRA passages (same level # and series as above), the student will read aloud at an average increase of 2.6 (#) wpm and no increase in errors.

Figure 1. Michael's Goal and Objective Form



29

Figure 2. Number of Correct Words (•) and Errors (o) Per Minute Read by Michael from Pages in SRA, Level 2 Across Time, Under Baseline (a) and Three Instructional Strategies (B, C, and D).

30

Instructional Change Form

Instructional Procedures	Arrangement	Time	Materials	Motivational Strategies
Oral Reading Practice Comprehension exercises	Group (1:5)	45 minutes	Double Action Short Story, Part 2 Story Writing & class discussion	Generating own stories
Language Experience Approach	Individual with para-professional	same	Student's own stories File cards Story Folder	same
Language Experience	Individual with para-professional	20 minutes	See above	same
Reading Comprehension Activities	Individual with teacher	20 minutes	McCall-Crabbs, Book E SRA kit	individual arrangement with teacher

Figure 3. Michael's Instructional Change Form

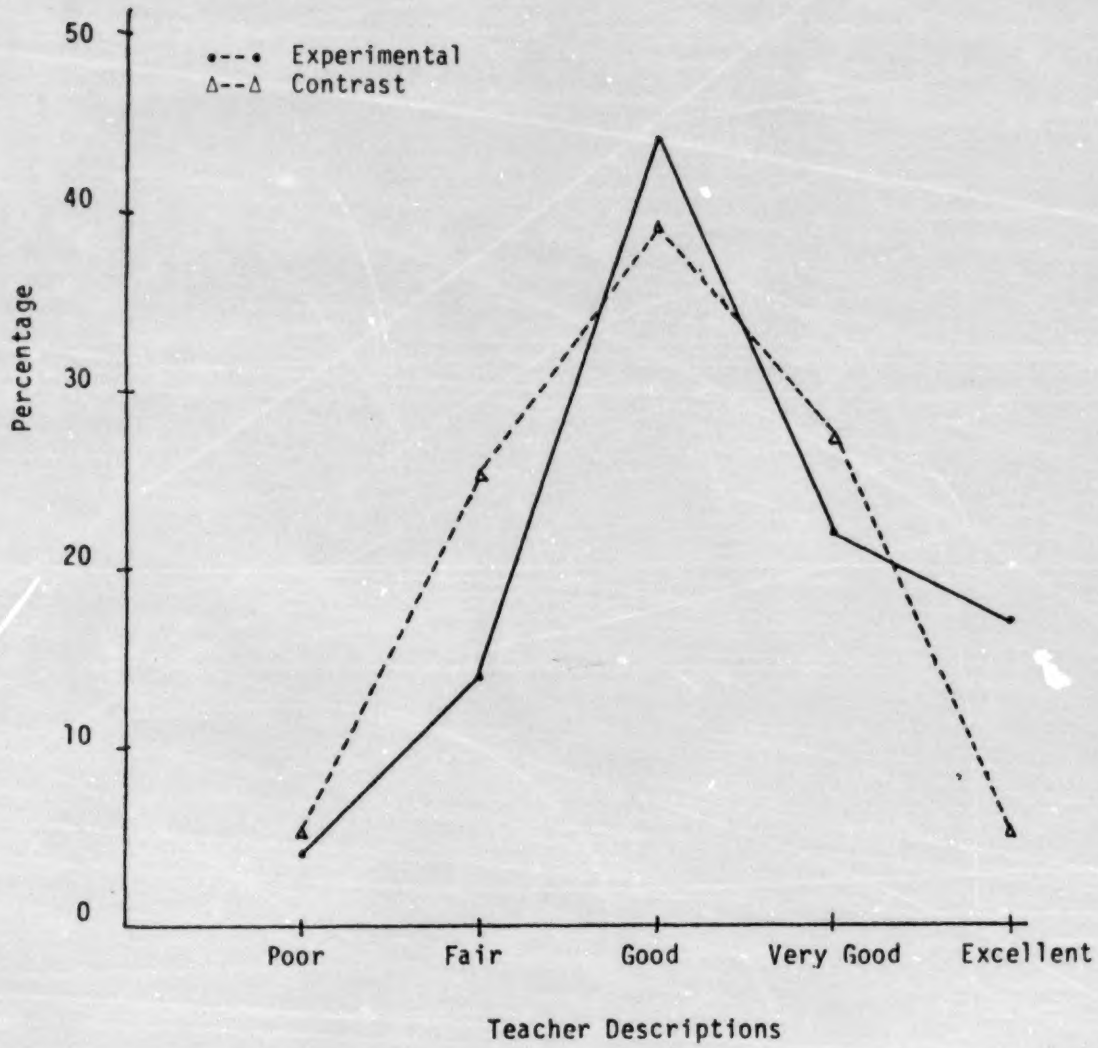


Figure 4. Percentages of Teacher Descriptions of Student Progress in April.

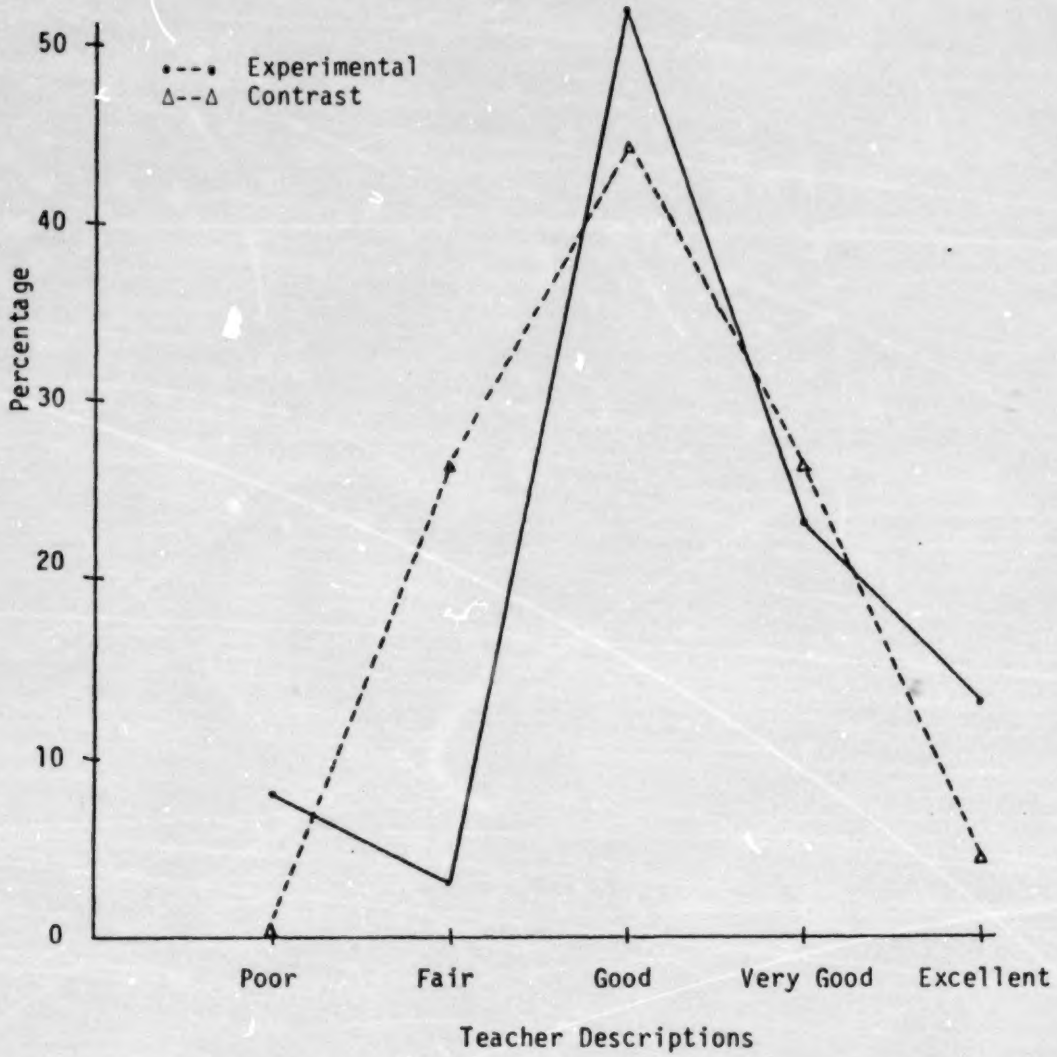


Figure 5. Percentages of teacher descriptions of student progress in June.

Structure of Instruction Rating Scale (SIRS)

School:_____ Student:_____

Date:_____ Teacher:_____

Observer:_____ Number of Students in Group:_____

Number of observations prior to rating:_____

Time observation begins:_____ Time observation ends:_____

Time allocated to reading instruction per day:_____

Curriculum used for instruction: Publisher_____

Series_____ Level_____

Instructions

Circle the number that accurately reflects your rating for each variable. Only one number may be circled per variable. If you are unable to evaluate a certain variable, mark N/A (not applicable) next to the left-hand column.

1.	Instructional Grouping	1	2	3	4	5
2.	Teacher-directed Learning	1	2	3	4	5
3.	Active Academic Responding	1	2	3	4	5
4.	Demonstration/Prompting	1	2	3	4	5
5.	Controlled Practice	1	2	3	4	5
6.	Frequency of Correct Answers	1	2	3	4	5
7.	Independent Practice	1	2	3	4	5
8.	Corrections	1	2	3	4	5
9.	Positive Consequences	1	2	3	4	5
10.	Pacing	1	2	3	4	5
11.	Oral Practice on Outcome Behavior	1	2	3	4	5
12.	Silent Practice on Outcome Behavior	1	2	3	4	5

SIRS

Operational Definitions Codebook

1. Instructional Grouping

   5 - 90% or more of the instruction this student receives from the teacher is on an individual basis.

   1 - 10% or less of the instruction this student receives from the teacher is on an individual basis.

2. Teacher-Directed Learning

   5 - Student's instruction is extremely organized, businesslike, and teacher is firm in direction and control of activities. For example, student is presented with questions, student has material to cover, etc.

   1 - Student's instruction is casually organized and very spontaneous. Teacher is not committed to having the student work on a particular set of material. Instructional materials do not determine what activities student engages in and the lessons change according to problems or mood of this student.

3. Active Academic Responding

   5 - The student is actively practicing the academic skills to be learned more than 75% of the time observed. Specifically, the student is engaged in oral or written responding to teacher questions or written material, e.g., reading aloud, answering questions, writing, or computing. Student rarely is involved in non-academic conversations with teacher or other students Attending to the lesson without responding, such as sitting, looking, listening, and/or following along in a book does not apply. The student must make an active, written or oral response.

   1 - The student is actively practicing the skills to be learned less than 10% of the time observed. Instructional lessons may be interrupted or shortened to include "process" and other non-academic activities, e.g., clarifying feelings, opinions, and working on arts and crafts.

4. Demonstration and Prompting

   5 - Appropriate steps of the desired behavior to be performed are demonstrated for the student. Student is given an opportunity to practice the step(s) as teacher provides prompts for correct behavior that approximates or achives desired response.

   1 - Teacher attempts to teach the student a behavior without using demonstration and prompting techniques.

SIRS

5. Controlled Practice

5 - Student's practice of material is actively controlled by teacher who frequently asks questions to clarify that the student understands what has just been demonstrated. Questions are convergent (single factual answer) and the student's answers consistently follow the questions and are given teacher feedback.

1 - Student is rarely questioned by teacher following demonstration of new materials. Questions are more divergent (open-ended, several interpretations) than convergent (single factual answer). Student's response is not consistently followed by teacher feedback. The type of questions are such that several answers are acceptable, i.e., questions are abstract or ambiguous.

Examples:

If during an oral reading session:

a) the teacher frequently attempts to clarify the material with convergent questions ("what color hat was John wearing?"), a 5 would be recorded.

b) the teacher asks few questions, most of which are divergent ("What do you think this means?"), a 1 would be recorded.

c) the teacher asks few convergent questions or many divergent questions, the appropriate rating would be a 3.

6. Frequency of Correct Answers

5 - Academic lessons are conducted in such a way that the difficulty of the material allows the student to achieve mean accuracy of 80% or higher.

1 - Academic material is difficult for student, component steps are large or unsequenced, and mean accuracy for student is less than 55%.

(Note: If the student has no opportunity for oral or written response during the observational period, item 6 would be rated N/A - not applicable, while items 3 and 5 would most likely be rated 1).

7. Independent Practice

5 - When engaged in independent seatwork, the student frequently is monitored by the teacher who assists, clarifies, and praises the student for academic engaged tasks.

(Note: Independent seatwork is defined here as a student working on an assigned task for at least 5 minutes. [If no such 5-minute block of time is observed, Item 7 is rated N/A].)

SIRS

1 - When student is engaged in academic seat-work activities, little attention is given by teacher who directs seat-work activities from a distance or engages in work separate from the assigned seat work. Teacher is generally not helpful or supportive to student during independent practice time.

8. Corrections

5 - The student's errors are consistently corrected by the teacher. When the student either does not respond, responds incorrectly, or does not respond in unison if the activity is group directed and requires such responding, the teacher will systematically attempt to correct the student by asking a simpler question, refocusing student's attention to elicit correct response from the student or provide general rules by which to determine the correct answer 90% or more of the time.

1 - Student's errors are rarely and inconsistently corrected by the teacher. The student responses are not systematically corrected. Student's errors are corrected 50% or less of the time.

For example: In oral reading this includes teacher correction of skips and mispronunciations, or help in sounding out hesitations.

9. Positive Consequences

5 - Positive events (tokens, points, activities, etc.) are given to the student when performing the desired behavior. When learning a new skill the student receives positive consequence for approximations of the desired behavior. Consequences are consistently received during academic training time. Praise and compliments, e.g., "good working, nice job," are not included in this definition.

1 - Student rarely receives positive consequences for academic work. When student receives consequences they usually are for social behavior, rather than for behaviors occurring under systematic academic training.

10. Pacing

5 - The pace of the lesson is rapid, providing many opportunities for response by the student. As a result, attention is high and off-task behavior is low.

1 - The pace of the lesson is slow and the student's rate of responding is low. Lesson format frequently varies, is not highly structured, and student attention may be low.

11. Oral Practice on Outcome Behavior

5 - Student reads aloud from context nearly all the time (85-100% or 12-15 min. of a 15 min. observation).

1 - Student does not read aloud during the observation (0% of the time).

(Note: Reading aloud for measurement purposes should not be considered when rating this variable. Reading in context is defined as reading phrases, sentences, paragraphs, or story selections.)

Examples:

If the student is reading isolated words nearly the entire time, the appropriate rating is a 3.

If the student is reading aloud from a text about half the time, a 3 would be recorded.

12. Silent Practice on Outcome Behavior

5 - Student reads silently from context nearly all the time (85-100% or 12-15 min. of a 15 min. observation).

1 - Student does not read silently during the observation (0% of the time).

(Note: Reading in context is defined as the same as #11. The examples of #11 are the same for #12, with silent reading.)

Appendix B

Semi-Annual Teacher Questionnaire

Student's Name_____ Date_____

Teacher's Name_____

1) Is the student making sufficient progress in reading so that he/she will meet the annual reading goal?

☐ Yes ☐ No ☐ Uncertain

2) Have you changed your reading goal within the last two months?

☐ Yes ☐ No ☐ Uncertain

3) Is your current reading program successful?

☐ Yes ☐ No ☐ Uncertain

4) For reading, please write a precise statement that describes the student's current level of functioning or indicate that you are uncertain about the student's current level of functioning.

Current Level of Functioning

_____

☐ Uncertain

5) Please characterize this student's progress so far this year by one of the following descriptions:

☐ Poor ☐ Fair ☐ Good ☐ Very Good ☐ Excellent

Check (✓) the type(s) of information you used to answer question five. Circle the one type of information you rely on the most to provide an indication of student progress.

_____ 1. Standardized achievement tests
_____ 2. Standardized diagnostic measures
_____ 3. District developed tests
_____ 4. Basal text mastery tests
_____ 5. Criterion-referenced measures
_____ 6. Direct and frequent measurement
_____ 7. Teacher-made tests/oral quizzes
_____ 8. Scoring workbooks
_____ 9. Scoring worksheets
_____ 10. Amount of work completed
_____ 11. Informal observation of student performance
_____ 12. Formal observation
_____ 13. Consultation with classroom teacher regarding classroom performance
_____ 14. Number of short-term objectives mastered
_____ 15. Other_____

_____

Make sure you have circled the type of information you rely on the most to provide an indication of student progress.

END-OF-YEAR SPECIAL TEACHER QUESTIONNAIRE

Student's Name_____ Date_____

1) How different were the continuous evaluation procedures you implemented from your normal procedures for evaluating student progress?

☐ Very Different ☐ Different ☐ Somewhat the same ☐ Very much the same

2) In what ways do the continuous evaluation procedures you implemented differ from your normal procedures for evaluating student progress?

a._____

_____

b._____

_____

c._____

_____

How useful were the continuous evaluation procedures in:

3) Developing the student's IEP?

☐ Not sure ☐ Not Helpful ☐ Somewhat Helpful ☐ Helpful ☐ Very Helpful

4) Establishing goals?

☐ Not sure ☐ Not Helpful ☐ Somewhat Helpful ☐ Helpful ☐ Very Helpful

5) Measuring progress toward goals?

☐ Not sure ☐ Not Helpful ☐ Somewhat Helpful ☐ Helpful ☐ Very Helpful

6) Deciding when to change the student's program?

☐ Not sure ☐ Not Helpful ☐ Somewhat Helpful ☐ Helpful ☐ Very Helpful

7) Communicating evaluation information to school personnel?

☐ Not sure ☐ Not Helpful ☐ Somewhat helpful ☐ Helpful ☐ Very Helpful

8) Communicating evaluation information to parents?

☐ Not sure ☐ Not Helpful ☐ Somewhat helpful ☐ Helpful ☐ Very Helpful

9) Communicating evaluation information to students?

☐ Not sure ☐ Not Helpful ☐ Somewhat helpful ☐ Helpful ☐ Very Helpful

10) Among the uses cited above, please rank order 3 purposes for which the procedures were most useful:

most useful for_____

second most useful for_____

third most useful for_____

11) How time consuming were the procedures?

☐ Very time Consuming ☐ Time Consuming ☐ Not Very Time Consuming ☐ Not at all Time Consuming

12) If you had a choice, would you use the procedures next year in some way?

☐ Yes ☐ No ☐ Maybe

If yes, please describe briefly what, if any, modifications you will make in the procedures?

_____

_____

If yes, in what academic areas will you use these procedures?

_____

_____

_____

Appendix C

Goal and Objective Form

GOAL In _____ (# school weeks until year's end), when presented with stories from _____ (Level #, series), _____ (student's name) will read aloud at the rate of _____ (wpm correct) with no more than _____ (#) errors.

OBJECTIVE Each successive week, when presented with a random selection from _____ (same level # and series as above), student will read aloud at an average increase of _____ (#) wpm and no increase in errors.

MEASUREMENT SYSTEM Frequency: at least 2X/week; stimulus format: oral reading passages; Test administration procedure: same as manual; Scoring procedure: same as manual; charting conventions: same as manual.

Appendix D

Sample Experimental Training Schedule

Teacher Trainer_____ Date_____

Teacher _____

School _____

Below, please: (a) describe the nature of the training you have provided this teacher during the study, (b) indicate the administrative arrangement under which the training was provided (individual, 1-3 ratio, etc.), and (c) estimate the number of hours you spent with the teacher on each training area.

DESCRIPTION OF TRAINING	ARRANGEMENT	NUMBER OF HOURS
data-based monitoring procedures	individual	15 hrs.
meeting the individual needs of the students	individual	1 hr.
teaching decoding and comprehension (literal and inferential) skills	individual	3 hrs.
classroom management for reading	individual	1 hr.

Sample Contrast Training Schedule

Teacher Trainer _____ Date _____

Teacher _____

School _____

Below, please: (a) describe the nature of the training you have provided this teacher during the study, (b) indicate the administrative arrangement under which the training was provided (individual, 1-3 ratio, etc.), and (c) estimate the number of hours you spent with the teacher on each training area.

DESCRIPTION OF TRAINING	ARRANGEMENT	NUMBER OF HOURS
Using the language experience approach	individual	10 hrs.
Individualizing	individual	5 hrs
Using audio-visual equipment for teaching and motivating	individual	2 hrs.
Diagnostic assessment tools	individual	3 hrs.

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